

CHAPTER 1: INTRODUCTION

FINAL REPORT



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CHAPTER 1. INTRODUCTION

1.1 SCOPE OF THE EIA-EMPR

This document addresses the marine component of the proposed project, i.e. the activities to take place within the Mining Licence Area ML170 (the recovery of mineralised sediments), in accordance with the requirements of the Environmental Management Act (No. 7 of 2007) and the conditions of the issued Mining Licence. The Mining Licence requires that an environmental contract be entered into with the Ministry of Environment and Tourism for such Mining Licence Area to be issued in accordance with the Environmental Management Act, (Act No 7 of 2007).

A separate EIA addresses activities related to the terrestrial component of this project (i.e. the shore based plant and operations required for beneficiation of the mineralised sediments recovered from the Mining Licence Area ML 170). Accordingly two EIA processes have been registered separately with the Ministry of Environment and Tourism¹. These EIAs will be submitted separately for approval to the authorities. However, in order to address the overall impacts of the Sandpiper Phosphate Project, a Project Summary Report, including an assessment of the combined impacts of the project, will be included as part of the terrestrial EIA. The terrestrial EIA will also include an overall socio-economic assessment of the project.

This EIA-EMPR has been prepared to meet the requirements of the Environmental Management Act (No. 7 of 2007) and the conditions of the Mining Licence (ML. 170) issued on 13th July 2011 by the Ministry of Mines and Energy.

The EIA-EMPR prepared for dredging activities within the Mining Licence ML 170, specifically addresses the following:

1. Recovery of phosphate-enriched sediments by Trailing Suction Hopper Dredger (TSHD) from water depths of 190 to 275 m;
2. Dredging from within two initial target mining areas (Sandpiper-1 and Sandpiper-2), each area measuring of 22 km by 8 km, and subsequently Sandpiper-3 (11 km by 6 km);
3. The presently identified maximum thickness of sediments to be recovered from within these target areas is 3 m. Locally within the Mining Licence Area the deposit is known to extend up to 6 m.²;
4. Exploration (resource development) activities will continue within the entire Mining Licence Area;
5. Normal operational activities of the dredger, including discharge of slurry from the vessel to the shore via a sinker line, and
6. Dredger support vessel operations.

¹ Marine component registered 7th December 2010 and terrestrial component registered 24th November 2011.

² Exploration activities are required to evaluate the extent of the 6 m deposit.

1.2 LOCATION OF THE PROJECT

The Sandpiper marine phosphate project is located on the Namibian continental shelf approximately 120 km south southwest (SSW) of Walvis Bay and approximately 60 km offshore from the coastline. Namibian Marine Phosphate (Pty) Ltd (NMP) has defined to internationally approved standards the existence of a potential world-class phosphate deposit of 1,832 Mt (at 15% P₂O₅ cut off), in the Mining Licence ML170 Area (Figure 1.1)³. The Mining Licence (ML 170) was issued in June 2011 and comprises an area of 2233 km².

The eastern boundary of the mining licence area is approximately 40-60 km off the coast (directly west of Conception Bay). The water depths in the licence area range from 180 to 300 m. The Mining Licence ML170 Area is 25.2 km wide (greatest width) and 115 km long (greatest length).

The phosphate enriched sediments and currently defined mineral resources are located throughout the entire Mining Licence Area. Within the Mining Licence Area three initial target-recovery areas have been selected. These areas are referred to as; Sandpiper-1 (SP-1), Sandpiper-2 (SP-2) and Sandpiper-3 (SP-3) (Figure 1.2).

1.3 REQUIREMENTS FOR AN ENVIRONMENTAL IMPACT ASSESSMENT

In order that the Ministry of Environment and Tourism (MET) can make an informed decision regarding the recovery of the phosphate enriched sediment, it is necessary that potentially significant environmental impacts are identified and assessed. Therefore, in accordance with the Environmental Management Act (No. 7 of 2007) ("the Act"), it is necessary to undertake an Environmental Impact Assessment (EIA), and develop an Environmental Management Plan (EMP) to provide the criteria for the management and monitoring of the implementation of the mitigation measures.

This EIA-EMPR details the potential impacts of the project and the management actions required to mitigate these significant impacts. These undertakings are in compliance with the primary objectives of the Act, which are that:

- The developer consider the impact of the proposed activities on the environment;
- Interested and Affected Parties are encouraged to participate in environmental assessments, and
- The findings of environmental assessments are considered before any decisions are made about activities that might affect the environment.

In addition to the requirements of the Environmental Management Act, NMP is required to comply with the requirements of the Minerals (Prospecting and Mining) Act (Act No. 33 of 1992). This includes the conditions of the Mining Licence as issued by the Ministry of Mines and Energy (MME).

³ Mineral resource is JORC compliant with: Measured resource as 4.09 Mt @ 20.45 % P₂O₅, Indicated Resource as 220,35 Mt @ 20.13 % P₂O₅, Inferred Resource of 1,607.8 Mt at 18.9 % P₂O₅

1.4 OBJECTIVES OF ENVIRONMENTAL IMPACT ASSESSMENT

These are identified as:

- To identify the issues that would be addressed in the EIA through consultation with the Authorities, the public (both interested and affected parties), and the specialist consultants;
- To identify and evaluate actual and potential impacts resulting from the proposed dredging of marine phosphate-rich sediments from within Mining Licence Area ML 170 that potentially may influence the environment;
- To recommend, where necessary, additional investigations that may need to be undertaken to confirm the desk top evaluations, and
- To recommend management, mitigation, and monitoring programmes to be implemented before and or during dredging.

1.5 TERMS OF REFERENCE FOR THE MARINE EIA⁴

The scope of work for the EIA encompasses the following:

To carry out a complete Environmental Impact Assessment Study in compliance with Namibian Law, which includes the establishment of a detailed Environmental Management Plan for the proposed marine Project: *The recovery of Marine Phosphates from Mining Licence Area ML 170*.

The marine EIA will be supported by a terrestrial EIA that will address matters related to the land based plant and operations for beneficiation of the recovered phosphate material and all related matters. The terrestrial EIA is not included with the marine EIA's scope of work. However, whilst these two EIAs are conducted independently, they are mutually supportive in respect of providing a clear assessment of the combined and cumulative effects of the proposed Sandpiper Project. The outcomes of the two EIAs will therefore provide the appropriate management and mitigation measures to address the issues and concerns and impacts identified during the respective EIA processes.

1.6 MARINE EIA PROJECT TEAM

NMP appointed Mr. Jeremy Midgley of J. Midgley and Associates to coordinate the marine EIA for the project. NMP also appointed the CSIR (Mr. P Morant) to independently review the overall EIA and specialist reports produced and to verify the quality of the EIA inputs and to ensure that full and complete due process was conducted to satisfy the requirements and standards of relevant legislation. Enviro Dynamics (Mrs. S van Zyl) was appointed as the Public Process Participation Consultants to manage the required public processes for incorporation in the EIA-EMPR. Table 1.1 provides detail of the Marine EIA Project Team.

⁴ The ToRs are reproduced from the Scoping Report, prepared November 2011.

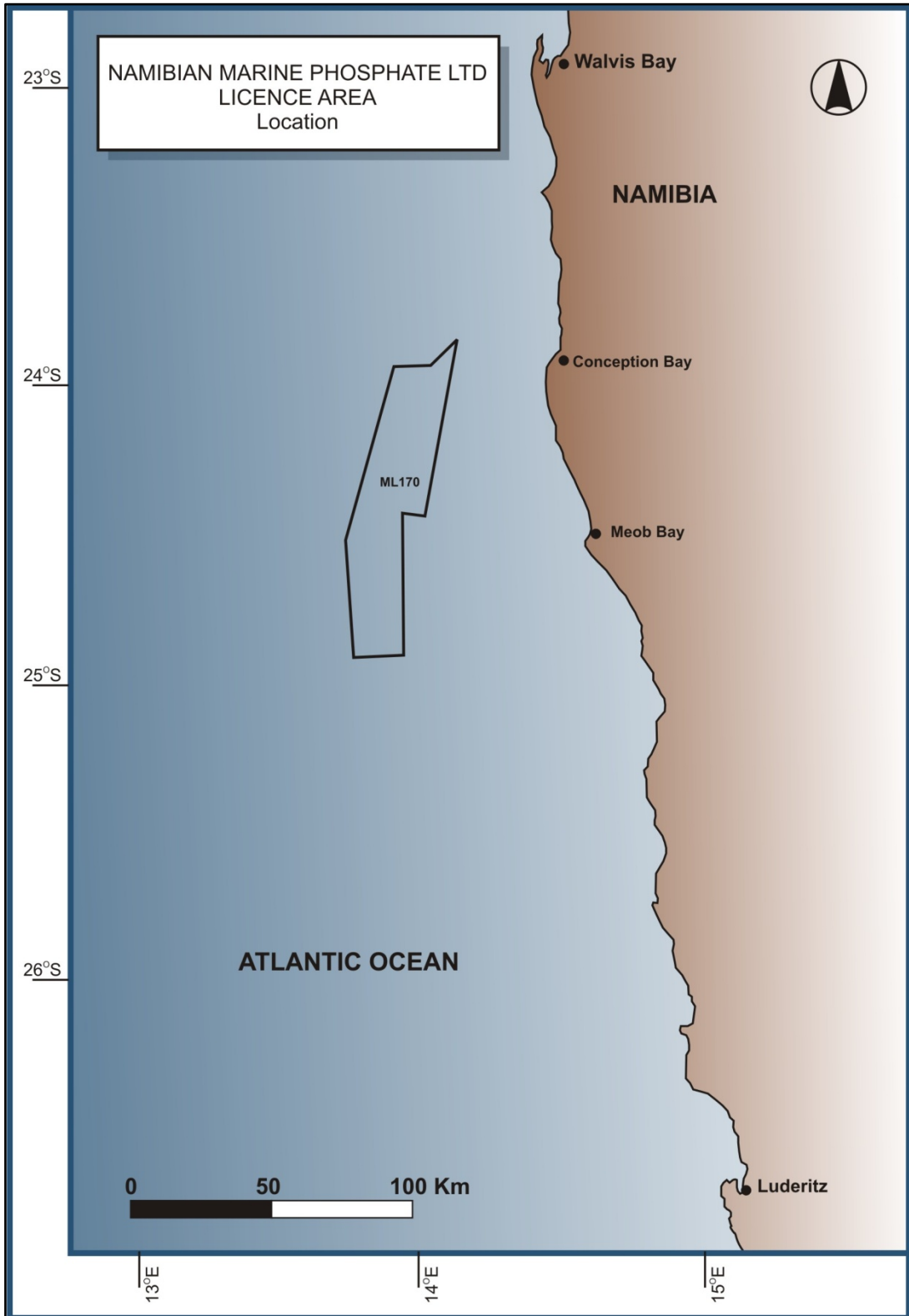


Figure 1.1 Location of the Mining Licence Area

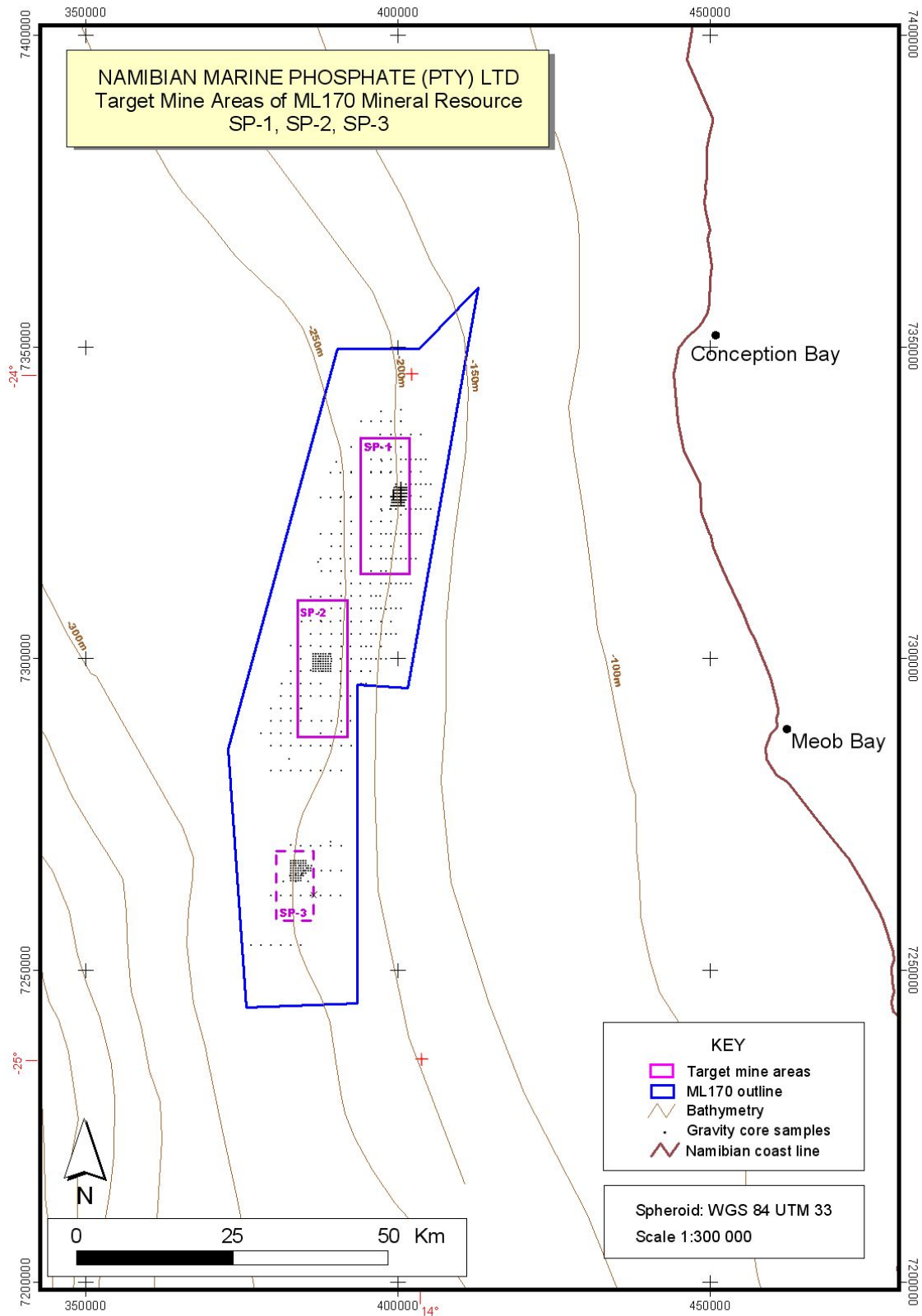


Figure 1.2 Location of the Mining Licence ML170 Area

Table 1.1: Marine Project EIA Team.

Project Coordination		
Mr. Jeremy Midgley	J Midgley and Associates	Project Manager
Specialist Environmental Consultants		
Mr. Dave Japp	Capricorn Fisheries Monitoring	Marine fauna
Dr. Robin Carter	Lwandle Technologies	Water column
Dr. Nina Steffani	Steffani Environmental	Benthic fauna
Prof. Mark Gibbons	<i>University of the Western Cape. Dept. of Biodiversity and Conservation Biology.</i>	Jellyfish
Public Participation Process		
Mrs. Stephanie van Zyl	Enviro Dynamics	Public Consultation
Client contribution		
Dr. Charles Morrison	NMP	Geology
Mr. Michael Woodborne	NMP	Project description
Mr. Roger Daniel	NMP	Project description
Dredging Contractor		
Mr. Jan Fordeyn	Jan De Nul	Vessel and dredging
Other Consultants		
Dr. Jeremy David	Independent consultant	Namibian Fishery History
Mr. Hans Smit	IHC Marine & Minerals Projects	Mining systems
Mr. John Sinden	JSA	Geochemistry
Prof. John Compton	<i>University of Cape Town. Dept. Geological Sciences</i>	Mineralogy and Geochemistry
Dr. Michael Baker	Bateman Advanced Technologies	Beneficiation & Geochemistry
Independent Review		
Mr. Patrick Morant	CSIR	Independent reviewer

1.7 STRUCTURE OF THE REPORT

The report is prepared as a suite of eight chapters, with three supporting appendices. These chapters and appendices support, describe, evaluate, and where necessary provide mitigation and monitoring requirements in order that the proposed project may be appropriately evaluated. The report structure is:

Cover and Summary

Provides a summary of the report.

Chapter 1: Introduction

Provides detail on the project location, contextualises the scope of the marine and terrestrial components of the project EIAs, details the terms of reference for the marine EIA-EMPR and lists the contributing project team members.

Chapter 2: Legislation & Policy

Provides a listing and a brief assessment of the relevant of the legislation that the project is required to consider. This includes national, international and corporate legal requirements.

Chapter 3: Project Description

Provides details of the project including the characterisation of the deposit, the dredging process, the scale of dredging and general vessel (including support vessel) operations.

Chapter 4: The Affected Environment

Provides an overview of the biophysical environment that may be impacted by the activities of the project.

Chapter 5: Socio-economics

Provides an overview of the socio-economic aspects of the project⁵.

Chapter 6: Public Consultation

Provides an overview of the public consultation process that is reported in full in the marine component Scoping Report (final), submitted to MET, 15 December 2011.⁶

Chapter 7: Assessment of the Environmental Impacts

Provides a description of the method used to evaluate the significance of the potential impacts, and an evaluation of these potential impacts using information from the studies conducted by the Specialist Consultants. Recommendations for management and mitigation are also presented in this chapter.

Chapter 8: Environmental Management Plan

Provides an overview of the management and mitigation measures that are to be undertaken to support this project.

Appendix 1

Provides the full reports prepared by each of the specialist consultants, who addressed; marine vertebrate fauna, fish and fisheries; water column chemistry and dynamics; benthic fauna and jellyfish.

Appendix 2

Provides copies of project supporting documentation.

Appendix 3

Provides a brief history of the Namibian Fishing Industry.

Appendix 4

Provides the independent review of this EIA-EMPR by the external reviewing party.

⁵ A full review of the socio-economic considerations is presented in the Terrestrial Component EIA-EMPR.

⁶ The full marine component scoping report can be viewed on the web site: <https://www.envirod.com>

Appendix 5

Details the comments received from I&APs on the Draft EIA and the responses from the Project Team.

References

These are presented at the end of each of the chapters, or in some instance by footnotes. The reference lists for the Specialists Consultants' investigations are listed at the ends of their respective reports.